PEDIATRIC

BASIC LIFE SUPPORT GUIDELINE

HEAD INJURY

SPECIAL CONSIDERATIONS:

- Head injury is the leading killer of children.

INDICATIONS:

- Exhibits signs and symptoms of head injury
  - Altered or decreasing mental status
  - Scalp findings suggesting trauma
  - Repetitively asks same question
  - Object penetrating from skull
  - Raccoon eyes or Battle signs Blood or clear fluid draining from nose or ear
  - Repetitive vomiting
  - Skull depression or deformity
- Signs and Symptoms of Severe Traumatic Brain Injury
  - Asymmetric, nonreactive, or dilated pupils
  - Posturing
  - Elevated blood pressure with decreased pulse
  - Declining mental status
  - Irregular respirations
  - Unconscious

CONSIDER THE POSSIBILITY OF CHILD ABUSE IN ALL PEDIATRIC TRAUMA VICTIMS.

1. **Assess and Maintain Airway and Ventilation**

   If patient has posturing, elevated blood pressure with bradycardia, or new pupil asymmetry consider hyperventilation (increase ventilation rate by 10-20%)

2. **Assess Circulation**

   Check for pulse (no longer than 30 seconds). If you cannot find a pulse, begin CPR

   Brachial (infants)
   Carotid (adults)
   Femoral (adults and children)

Age	*HR+*		*BP~*	*RR*
	Low	High		
Infant (birth–1 year)	**100**	**160**	**greater than 65***	30–60
Toddler (1–3 years)	**90**	**150**	**greater than 85***	24–40
Preschooler (3–6 years)	**80**	**140**	**greater than 90**	22–34
School-age (6–12 years)	**70**	**120**	**greater than 95**	18–30
Adolescent (12–18 years)	60	100	greater than 100	12–16

+Note: Pulse rates for a child who is sleeping may be 10 percent lower than the low rate listed.
~ Note: BP is based on 80+2xage to maximize sensitivity in detecting unstable patients.

**Note: In infants and children aged three years or younger, the presence of a strong brachial or femoral pulse should be substituted for a blood pressure reading.*

3. **Assess Perfusion of Skin-**

   Capillary refill if warm skin should be <2-3 seconds on dorsal foot at heart level.
   Is patient in shock?

4. Assess Disability

Level of Consciousness: AVPU Scale verifies level of consciousness; it does not quantify the degree of impairment. It is based on the child's response to a stimulus.

Category	*Response*	
	Appropriate	**Inappropriate**
Alert	Normal interaction for age	
Verbal	Responds to name	Non specific or confused
Painful	Withdraws from pain	Sound or motion without purposeful localization of pain
Unresponsive		No perceptible response to any stimulus

Pupil Response - Document these findings:

- Are both pupils the same size?
- Do they react similarly to light?
- Are they fixed and dilated?

5. Assess and document AVPU and pupil response at least every 5 minutes.

6. Transport and treatment according to appropriate local guidelines and protocols

- Elevate head
- O2
- Call medical control

REFERENCE MATERIAL:

The measure for neurologic injury used in hospitals is the Pediatric Glascow Coma Score (GCS). The Pediatric GCS involves numerical scoring of the patients' response to stimuli. In pediatric patients the response is affected by the age and developmental level of the child. The table on the following page illustrates the components of the Pediatric CGS by age of the child.

In general a description of the patient's mental status, verbal, ocular and motor response is more helpful to hospital personnel than is the exact number. If the descriptive information is correct the team can calculate the number.

PEDIATRIC

PEDIATRIC GLASCOW COMA SCALE			
EYE OPENING	~	~	EYE OPENING
SCORE	OVER 1YR	~	UNDER 1 YR
4	Spontaneously	~	Spontaneously
3	To verbal Command	~	To Shout
2	To pain	~	To pain
1	No response	~	No response
MOTOR RESPONSE	~	~	MOTOR RESPONSE
SCORE	OVER 1YR		UNDER 1 YR
6	Obeys	~	Spontaneous
5	Localizes Pain	~	Localizes Pain
4	Flexion-Withdrawal	~	Flexion-Withdrawal
3	Flexion-abnormal (i.e. decorticate rigidity)	~	Flexion-abnormal (i.e. decorticate rigidity)
2	To pain	~	To pain
1	No response	~	No response
VERBAL RESPONSE	~	~	VERBAL RESPONSE
SCORE	OVER 5YRS	2 to 5 YRS	0 TO 23 Mos.
5	Oriented & Converses	Appropriate words or phrases	Smiles or coos appropriately
4	Disoriented and converses	Inappropriate words	Cries and consolable
3	Inappropriate words	Persistent cries and/or screams	Persistent inappropriate crying &/or screaming
2	Incomprehensible sounds	Grunts	Grunts or is agitated or restless
1	No response	No response	No response